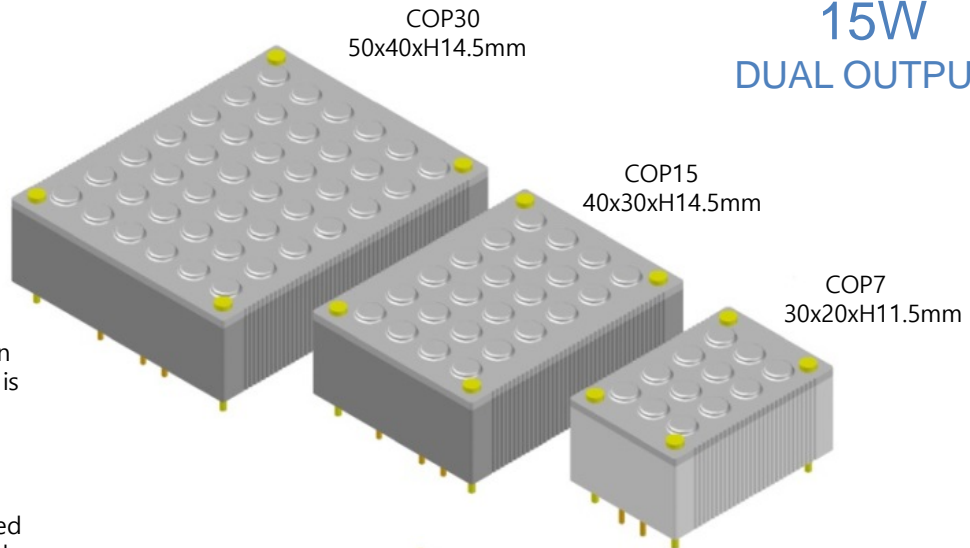
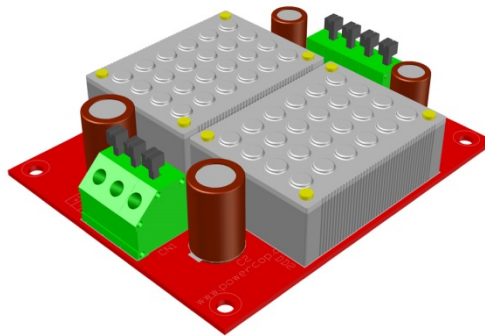
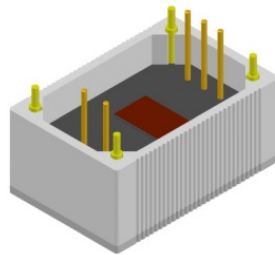


DC/DC  
15W  
DUAL OUTPUT

With an internal silicon molding, this product is dustproof and damp-proof. It is PCB ON BOARD type and is convenient because it can be directly soldered to PCB. Its case is made of aluminum metal, thus it is sturdy and has high heat protection. There are four pieces of alignment pins, making for a sturdy design that can withstand even with strong vibrations after it is soldered with PCB.  
(Recommended for electronic equipment, industrial, medical, ship, motor car, and communication devices)  
7W, 15W,

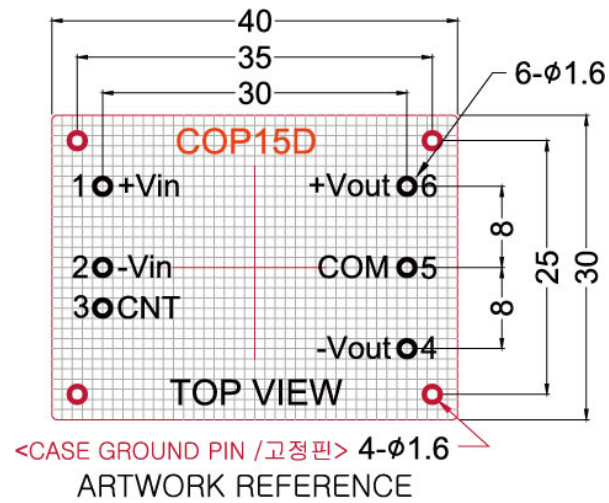
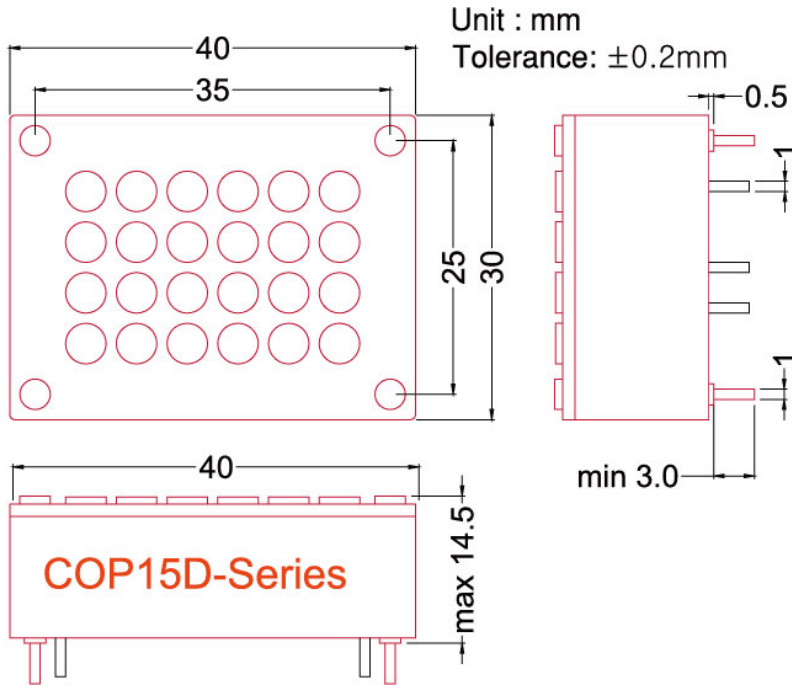


실리콘 몰딩으로 방진 방습 제품입니다. PCB on board 타입이며 DIP부품 처럼 PCB에 바로 인서트 할 수 있어 편리 합니다. 케이스가 알루미늄 메탈로 견고하고 방열 효율이 높습니다. 4개의 고정핀이 있어 PCB와 납땜 후에는 강한 진동에도 튼튼하게 설게 되었습니다. (전자기기, 산업용, 의료기, 선박, 전동차, 통신용 장비에 추천)  
7W, 15W,

Option 1 : Outside pcb Assembly  
Option 2 : Screw , Connector and Harness Accessory

## ◆ Features

- Small, compact size
- High efficiency
- Low output ripple & noise
- Isolated Input-output
- 10 years warranty
- RoHS directive



CNT= low active(CNT & -Vin short=On)

COP15D			Pin Assignment		
1	2	3	4	5	6
+Vin	-Vin	CNT	-Vout	COM	+Vout

(COP15D 40x30x H14.5 mm)

COP15D-XX-Series		15W DC-DC		(Dual Output)	
Model	Input Range	V-out	I-out	P-out	Efficiency
COP 15D-12-1212	9~18 VDC	+12V	0.42A	10.00W	83%
		-12V	0.42A		
COP 15D-12-1515	9~18 VDC	+15V	0.34A	10.00W	83%
		-15V	0.34A		
COP 15D-24-0505	18~36 VDC	+5V	1.20A	12.00W	80%
		-5V	1.20A		
COP 15D-24-1212	18~36 VDC	+12V	0.50A	12.00W	83%
		-12V	0.50A		
COP 15D-24-1515	18~36 VDC	+15V	0.40A	12.00W	83%
		-15V	0.40A		

## Environmental & Isolation Specifications

Parameter	Min	Typ	Max	Unit	Notes
Operating Temperature CASE<100°C	-40	-	85	°C	*(1)
Storage Temperature	-40	-	100	°C	
Operating Humidity (Non-condensing)	10	-	95	%	
Isolation Voltage (Input - Output)	500			VAC	At 10mA
(Input - Case)	500			VAC	At 10mA
Isolation Resistance (Input - Output)	100			MΩ	at 500VDC

(1) Derating Curve Reference

## General Specifications

Parameter	Min	Typ	Max	Unit
Switching Frequency		300		KHz
Remote ON/OFF control CNT	On = short to -Vin / Off = open			Vdc
Dimensions				mm
Weight				Grams

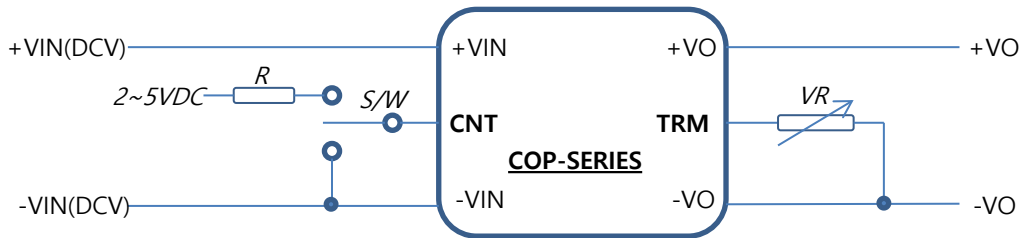
## Electrical Specifications Input Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Operating Input Voltage Range (Vin)					
12Vin	9	12	18	V	
24Vin	18	24	36	V	
48Vin	36	48	72	V	
72Vin	50	72	90	V	
110Vin	70	110	140	V	

## Electrical Specifications Output Characteristics

Parameter	Min	Typ	Max	Unit	Notes
Output Voltage Tolerance		-	±2	%	
Line Regulation		-	±0.5	%	
Load Regulation		-	±1	%	
Output Ripple & Noise Norminal Vin, Maximum Io, B/W 20MHz		-	1% of Vout	mV	
Dynamic Load Response		-	5% of Vout	mV	
TRM (Output Trimable Vout)		-	@+5%	%	

PIN FUNCTION	
+VIN	+SIDE INPUT VOLTAGE
-VIN	-SIDE INPUT VOLTAGE
CNT	REMOTE ON/OFF CONTROL
+VO	+SIDE OUTPUT VOLTAGE
COM	GROUND OF OUTPUT (ONLY FOR MULTIPLE OUTPUT)
-VO	-SIDE OUTPUT VOLTAGE
TRM	ADJUST OF OUTPUT (TRIM)
VS	REMOTE SENSING OF OUTPUT VOLTAGE
NC	NOT CONNECTOR



◆ **TRM ( Trim/ adjust output voltage)**

The output voltage is adjustable by external resistor.  
 When the output voltage adjustment is not used. Open the TRM pin.  
 When the output voltage is set too high, the over voltage protection circuit comes into effect.

◆ **CNT (remote on/off control)**

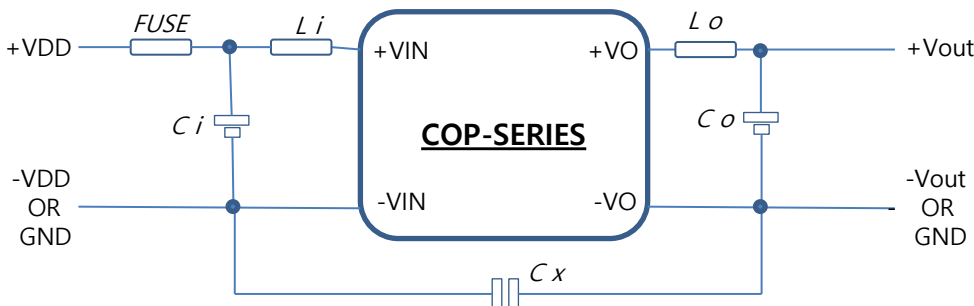
	CNT 단자	OPERATED CONDITION (제품 동작상태)
COP-SERIES	<b>OPEN OR HIGH(+2~5VDC)</b>	<b>OFF</b>
	<b>SHORT OR LOW(0~0.6V)</b>	<b>ON ( CNT 와 -VIN을 SHORT시키면 제품 켜집니다.)</b>

◆ **Wiring to external circuit (Reduce Ripple & noise)**

**C<sub>i</sub>, C<sub>o</sub>** : External capacitors are required at both input and output to reduce ripple.

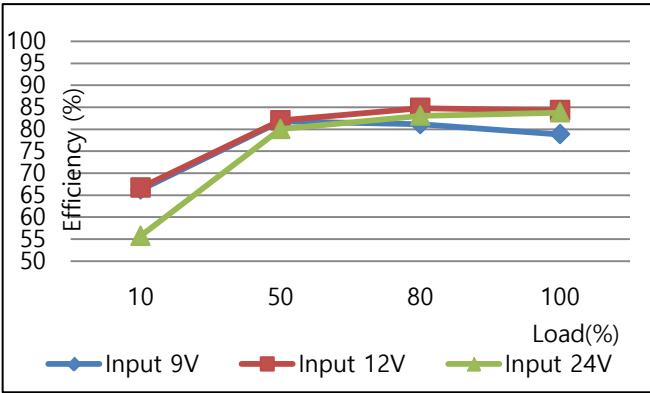
**C<sub>X</sub>** : Ceramic capacitor is required to reduce common mode noise .  
 Minimum 0.0022uF 1KV

**L<sub>i</sub>, L<sub>o</sub>** : Inductance 2~5uH

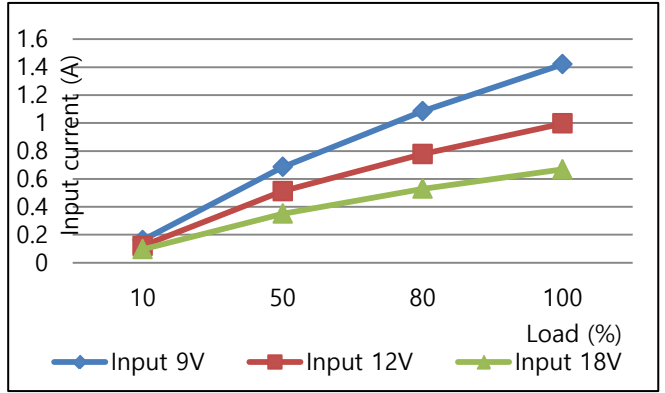


VIN	C <sub>i</sub>
12V	100uF 25V
24V	68uF 50V
48V	33uF 100V
72V	22uF 200V
110V	22uF 200V

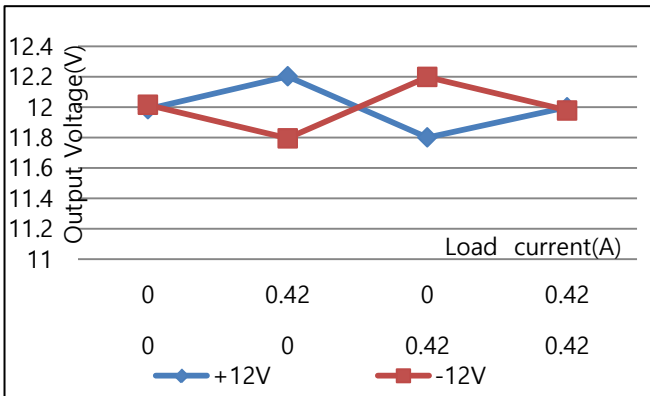
VO	C <sub>o</sub>
5V	100uF 10V
15V	47uF 25V
24V	47uF 35V
48V	47uF 100V



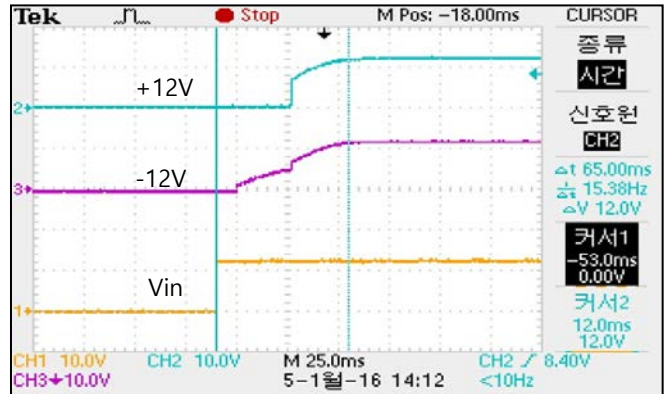
COP15D-12-1212  
EFFICIENCY CURVE VS LOAD AT25°C



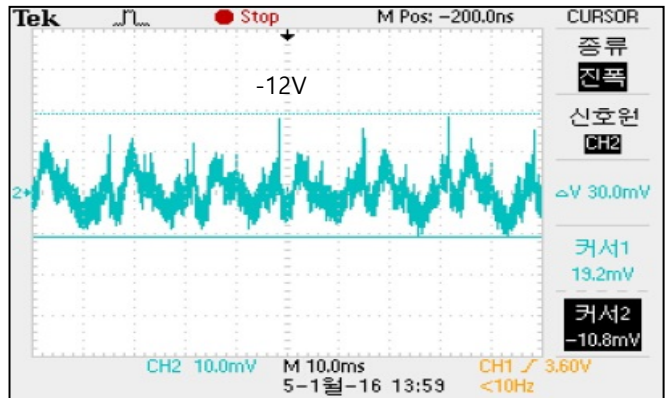
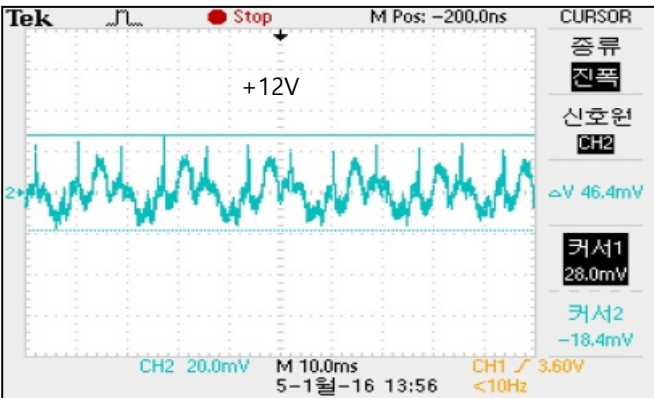
COP15D-12-1212  
INPUT CURRENT CURVE VS LOAD AT25°C



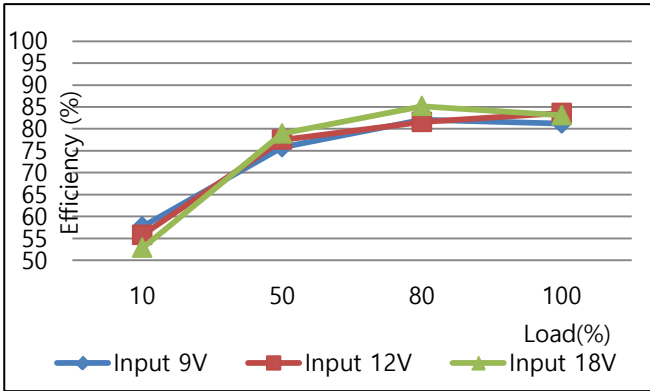
COP15D-12-1212  
CROSS REGULATION AT25°C



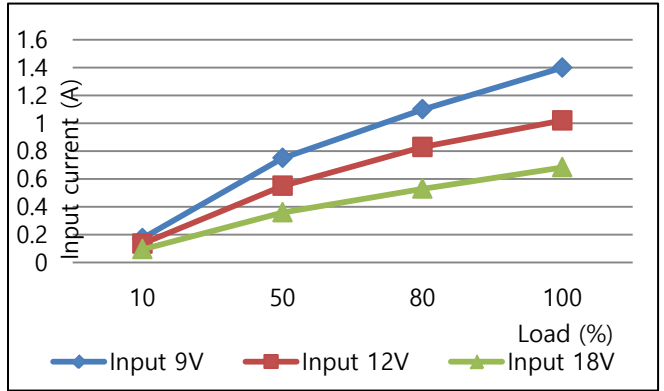
COP15D-12-1212 TURN-ON TIME  
VIN=12VDC, MAX-LOAD AT25°C



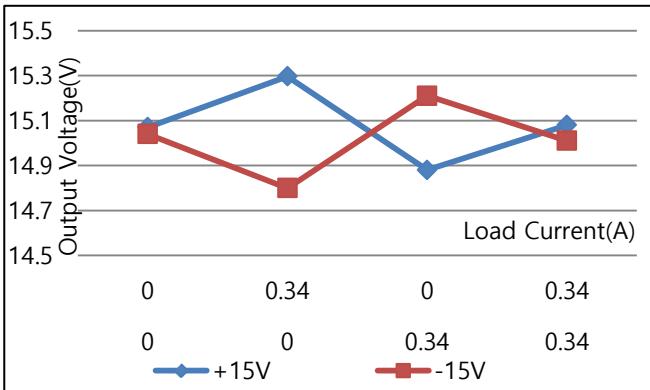
COP15D-12-1212 RIPPLE & NOISE VIN=12VDC, MAX-LOAD AT25°C



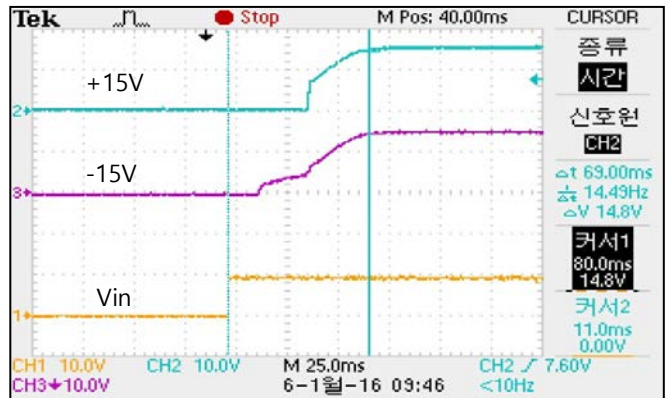
COP15D-12-1515  
EFFICIENCY CURVE VS LOAD AT25°C



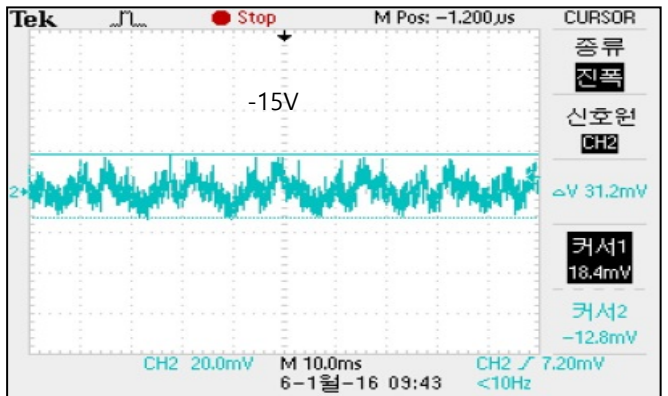
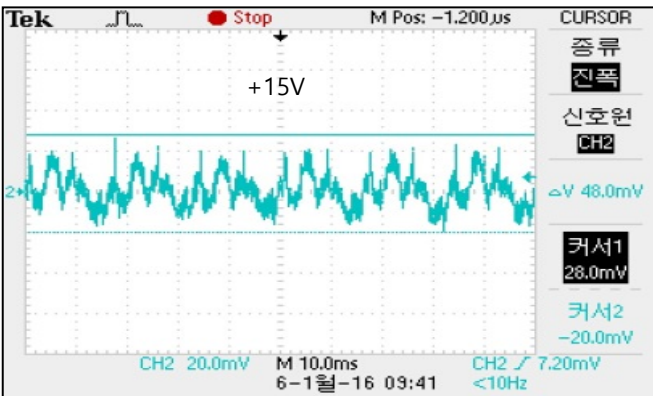
COP15D-12-1515  
INPUT CURRENT CURVE VS LOAD AT25°C



COP15D-12-1515  
CROSS REGULATION AT25°C

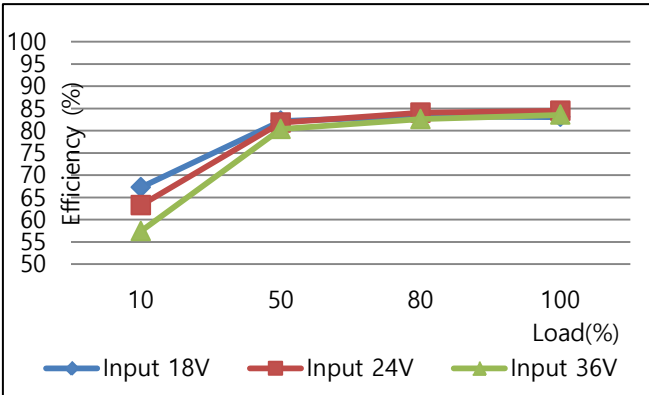


COP15D-12-1515 TURN-ON TIME  
VIN=12VDC, MAX-LOAD AT25°C

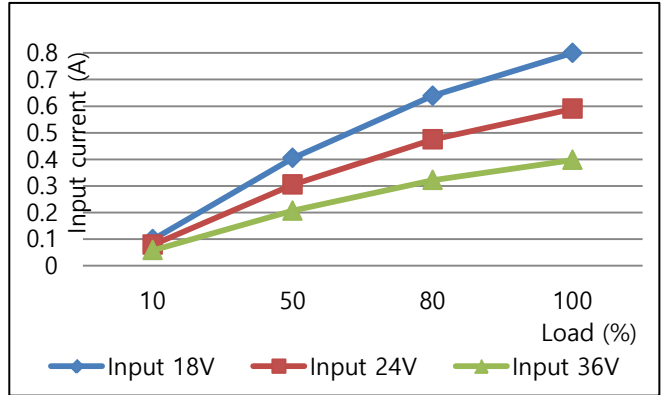


COP15D-12-1515 RIPPLE & NOISE VIN=12VDC, MAX-LOAD AT25°C

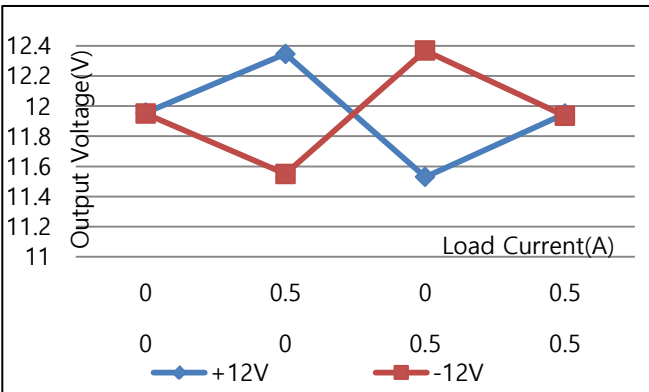




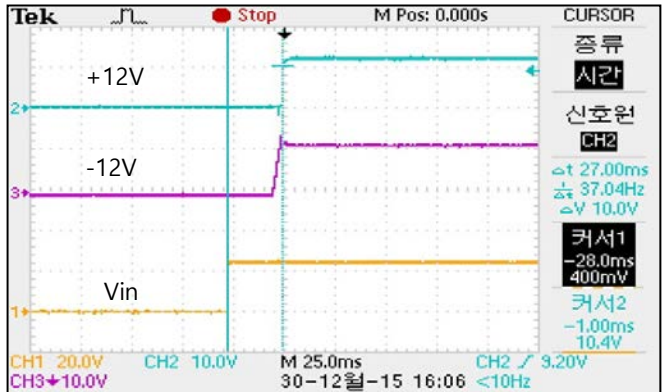
COP15D-24-1212  
EFFICIENCY CURVE VS LOAD AT25°C



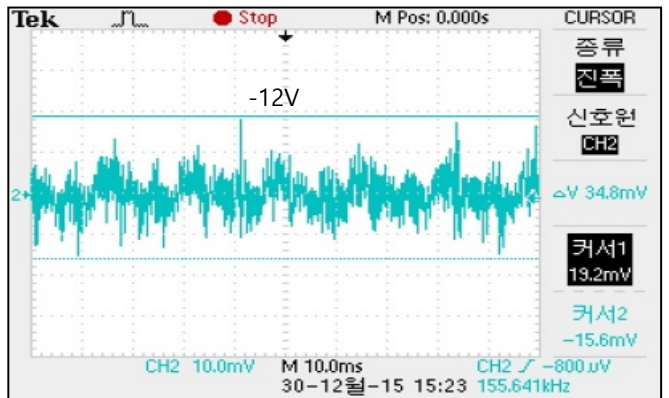
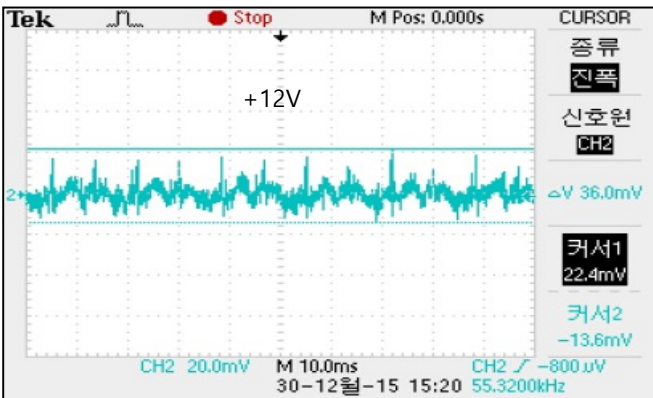
COP15D-24-1212  
INPUT CURRENT CURVE VS LOAD AT25°C



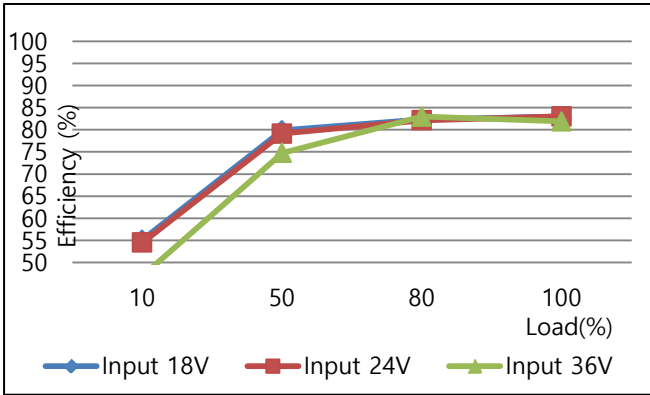
COP15D-24-1212  
CROSS REGULATION AT25°C



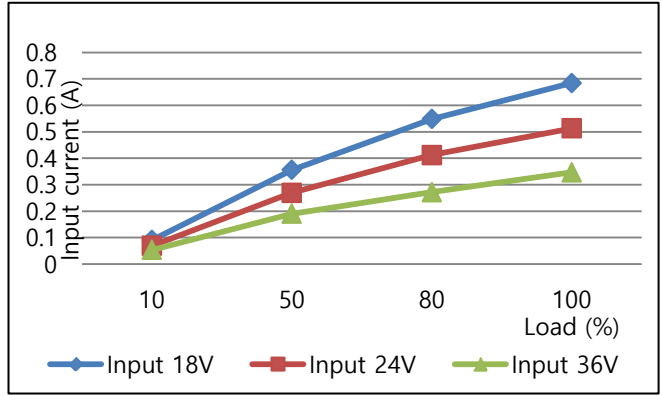
COP15D-24-1212 TURN-ON TIME  
VIN=24VDC, MAX-LOAD AT25°C



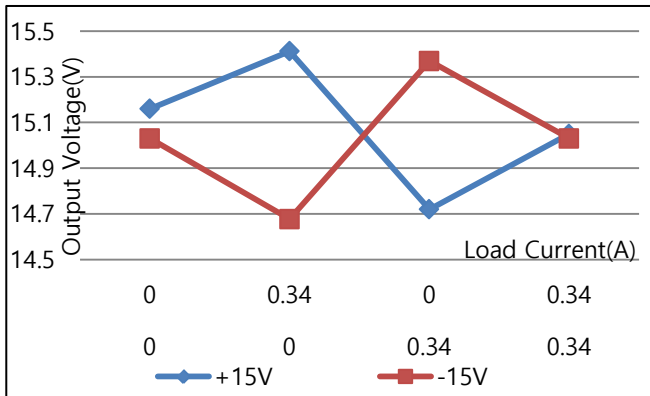
COP15D-24-1212 RIPPLE & NOISE VIN=24VDC, MAX-LOAD AT25°C



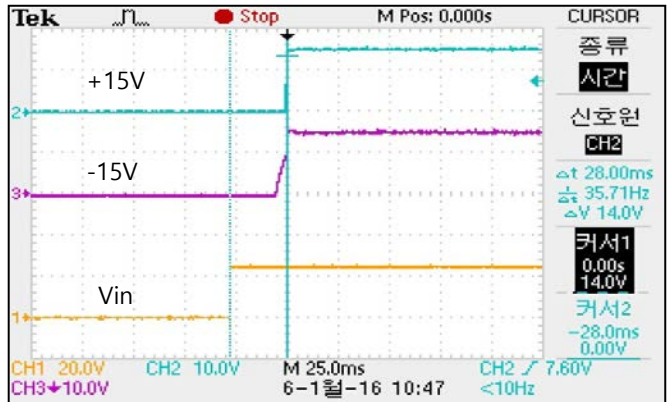
COP15D-24-1515  
EFFICIENCY CURVE VS LOAD AT25°C



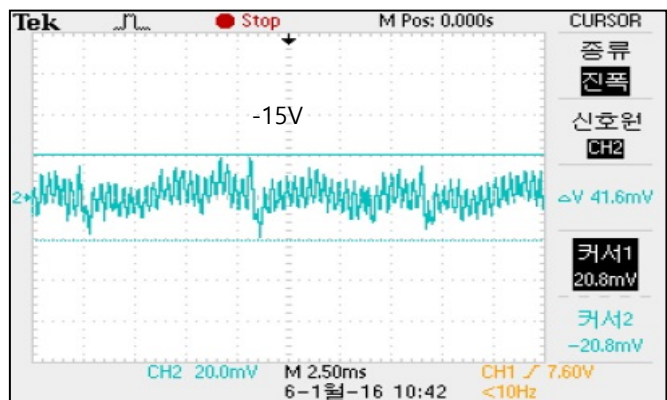
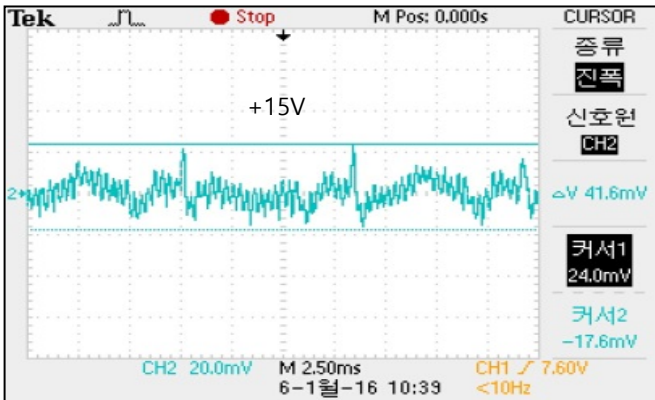
COP15D-24-1515  
INPUT CURRENT CURVE VS LOAD AT25°C



COP15D-24-1515  
CROSS REGULATION AT25°C



COP15D-24-1515 TURN-ON TIME  
VIN=24VDC, MAX-LOAD AT25°C



COP15D-24-1515 RIPPLE & NOISE VIN=24VDC, MAX-LOAD AT25°C